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AUTHOR Taliuli, Nelma; Gama, Elizabeth M. P.
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ABSTRACT

This investigation was designed (1) to assess to what causal factors Brazilian elementary students attribute their success or failure in achievement tasks; (2) to verify whether their attributions can be classified into the categories proposed by Weiner (1972): ability, effort, task difficulty, and luck; and (3) to assess the relationship between academic achievement, attributional patterns and self-concept. The subjects in the two studies consisted of 237 low socioeconomic status fourth grade students classified as having satisfactory (SP) and unsatisfactory (UP) academic performance. Study one showed that students' attributions can be classified into the four causal factors. In study two, subjects were administered a self-concept test, two mathematics, and two Portuguese tests. Asked to assign causality to their outcome, most of them attributed their success to effort. SP students externalized their failure and UP students internalized it. SP students had significantly higher self-concept scores. Results suggest that students with a history of academic success feel more capable to perform well than children with a history of failure. The latter do not believe in their ability to succeed. (Author/HOD)

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Causal Attribution, Self-Concept and Academic Achievement of Children from Low SES Families

Nelma Taliuli

State Department of Education, Espírito Santo Brazil

and

Elizabeth M. P. Gama

Federal University of Espírito Santo, Brazil

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Abstract

This investigation was designed to (a) assess to what causal factors elementary students attribute their success or their failure in achievement tasks; (b) to verify whether their attributions can be classified within the categories proposed by Weiner and (c) to assess the relationship between academic achievement, attributional patterns and self-concept. The research was carried out in two studies. The sample consisted of 237 low SES fourth grade students classified as having satisfactory (SP) and unsatisfactory (UP) academic performance. Study one showed that students attributions can be classified into the four causal factors proposed by Weiner. In study two, subjects were administered a self-concept test, two Mathematics and two Portuguese tests. Asked to assign causality to their outcome most of them attributed their success to effort. SP students externalize their failure and UP students internalize it. SP students had significantly higher self-concept scores. Results suggest that students with a history of academic success feel more capable to perform well than children with a history of failure. The latter do not believe in their ability to succeed.

Causal Attribution, Self-Concept and Academic Achievement of Children from Low SES Families

Nelma Taliuli
Secretaria de Estado da Educação
Espírito Santo, Brazil

Elizabeth Maria Pinheiro Gama
Universidade Federal do Espírito Santo, Brazil

In the past two decades educational opportunities have been extended to a large proportion of the Brazilian population. In that sense, educational statistics show that enrollment in elementary school has grown considerably. However, they also show that although many more children start school, a large proportion of them are still being excluded from the system before they complete four years of schooling. Social selectivity, represented by the high rates of retention in the grade and dropout, has been persistently operating in the interior of the schools. As expected, it affects mostly children from low socio-economic levels (Brandão, Baeta & Rocha, 1983; Cunha, 1979).

The experience of academic failure in an environment that values competence, achievement and excellence may have serious implications for the child's self-concept and expectation of future performance. Cognitive psychology, mainly attribution theory, argues that the impact of school success or failure on future achievement behavior is also mediated by the attributional patterns adopted by the child to explain the causes of the perceived outcome (Weiner, 1972). For example, if the child attributes his/her failure to lack of ability it is likely that in future tasks this same perception will still be held. Thus the child's expectation of success will be low, which will, in turn, determine less effort and involvement in the task and lowered performance.

Attribution theory proposes that the perceived causes of success and failure at achievement tasks may be categorized in four factors: ability, effort, task difficulty and luck. Though it is possible that individuals often assign causality to other factors, Weiner (1972) states that "the four causal elements listed above generalize to all achievement tasks, and account for the major sources of variance when considering the perceived causes of success and failure" (p. 355).

The four perceived causal factors are further classified in two causal dimensions: locus of control (internal and external) and stability (stable and unstable). Thus ability is internal and stable, effort is internal and unstable, task difficulty is external and stable and luck is external and unstable.

The model proposes that the causal attribution processes operate in the following manner:

. After initial involvement with the task the individual estimates an expectancy of success based on the antecipated level of ability, effort, task difficulty or luck. After the task is performed, it is re-evaluated and the attribution is made.

. If the initial estimations were based on a stable characteristic (ability or lack of ability, task ease or difficulty), these cognitions tend to influence the subsequent attributions. In other words, attributions of the task outcome to a stable factor affects the expectation and estimations of the factor for future actions. The logical deduction is that when a person perceives him/herself with high ability to perform an achievement task, it is unlikely that she/he would attribute a failure to lack of ability because this would also imply in changing a relatively stable perception. Furthermore, attribution of success to high ability will make future success highly probable.

In addition, effort (or lack of effort) and luck (or bad luck) attributions (unstable factors) would not need to affect the expectations of intentional effort and luck antecipated in future behaviors. This happens because failure attributions to lack of effort do not imply that in future tasks the level of effort must also be low. The individual may intend to put -- out more effort in the future. On the other hand, failure attributions to bad luck may lead to antecipation of better luck in the future.

In conclusion, attribution of success to high ability will bring a more positive effect than attributions to effort, good luck or task ease, because the perception of ability may generate more sense of competence. Similarly, attributions of failure to lack of ability may generate greater sense of incompetence.

The understanding of cognitive and affective elements related to academic achievement in low SES children is particularly important for Brazil where about half of the first grade children experience some kind of failure. If the predictions established by this attribution model are correct they may help to explain the impact of school failure on the subsequent academic performance of many children, mainly those from low socio-economic background. Coming from unfavorable socio-economic circunstances these children find in the school environment,not only a strange culture, but one with a set of norms and expectations based on values often unknown to them. Right from the beginning they are subject to evaluations and judgements where manifestations of effort and ability are important values that direct the distribution of rewards and punishments. Along with these negative circunstance the school system is

usually inadequate and the teachers poorly equipped to work with these children in a way as to maximize their potencial and decrease their probability of failure. The results are and have been disastrous --- retention in the grade or droupout. Obviously, these experiences may be quite traumatic mainly for young children. And for those who learn to attribute their failure to lack of ability there probably are serious implications for their self-concept and their perception of competence. On the other hand, the identification of inadequate attribution patterns is necessary as it is the first step for the adoption of corrective measures towards the incorporation of more adequate ones as suggested by Dweck (1975).

This investigation had the following purposes: (a) to assess to what causal factors elementary students attribute their success or their failure in achievement tasks; (b) to verify whether their attributions can be classified within the categories proposed by Weiner (1972); and (c) to assess the relationship between academic achievement, attributional pattern and self-concept.

The first two purposes were established for cross-cultural reasons --- as an initial attempt to assess the applicability of the model to Brazilian elementary students. For this reason they were investigated in a pilot study prior to a second research that assessed the relationship stated in the third purpose. -Here, the two studies will be reported separately with greater emphasis to the second one.

Study 1

Method

Subjects. The subjects were 40 fourth grade students (20 males and 20 females) randomly selected from a total of 65 low socio-economic status (SES) fourth grade students in the school where the study was done. Twenty of the students were classified as having satisfactory academic achievement (SAA) and twenty were classified as having unsatisfactory academic achievement (UAA). A SAA student was defined as any student who had a history of successive promotions at school and whose age was adequate to his or her grade. An UAA student was any student who had flunked school at least twice and whose age was beyond the adequate age/grade range. Socio-economic status was evaluated with the aid of Hutchinson Occupational Level Scale (1960).

Procedures. All subjects were interviewed by one of the investigators. The interview guide consisted of three open questions as follows:

1. Mention a test in which you got a high grade. Why did you get this grade?
2. Mention a test in which you got a low grade. Why did you get this grade?

3.1 You have never failed. Why do you think you are always promoted (question for the SAA student)? Or

3.2 Why do you think you flunked school... times (question for the UAA students)?

The first two questions assessed causal attributions regarding outcome in a specific academic situation. The third question assessed to what causes students attributed their overall academic achievement at school.

Analysis. The causes attributed by the students to their success or failure were classified, independently, by two judges. Agreement between the judges ranged from 95% to 100% in the four different classifications.

Results. A large majority of the causes attributed by the students to their academic success or failure in a specific achievement task could be easily classified into one of the four categories postulated by Weiner: ability, effort, task difficulty and luck. A few of the answers not classified in Weiner's categories show that the students assign causality to other sources such as weather, health, significant others, etc., but not in a significant proportion.

The attributions of success and failure in specific tasks were not compared between the two groups because students mentioned a large variety of different tasks involving different aptitudes and antecipations.

A majority (85%) of the SAA students assumed responsibility for their success and attributed it to their effort (n = 11) and their ability (n = 6). All of the three remaining attributions were categorized as other factors. None of the students attributed their success to luck or task difficulty (Table 1).

UAA students too tended to assume responsibility for their failure. Fifty percent of the attributions were to ability and effort and 5 of the 10 attributions classified as "other" were also internal.

Conclusion. Considering that a very large majority of the answers provided by the students could be easily classified into the four causal elements proposed by Weiner, it was concluded that four attributions also generalize to achievement tasks in Brazil when the perceived causes of success and failure are considered.

Study 2

Children from low SES families who have had a consistent history of academic success will probably explain their success and their failures differently from children, from equally disadvantaged families, but who have

had a history of academic failure. According to the attributional model of achievement behavior it would be expected that while successful children assume responsibility for their success and attribute their failure to external factors children with a history of academic failure do the reverse. If this is such, children with unsatisfactory academic achievement are locked in a circular self-defeating process that must be broken up.

Method

Subjects. A total of 197 low SES fourth grade students (SAA = 124; UAA = 73) participated in the study. However, not all subjects were present in all stages of data collection, a problem which was considered at the time of data analysis. The subjects' age ranged from 10 to 13 years old. Subjects were classified by SES and by level of academic performance (SAA and UAA) by the same criteria established for Study 1. All subjects studied in the same public school, (which was very distant from the school where the data for Study 1 were collected).

Procedures. All subjects were administered a self concept test, a Mathematics and a Portuguese test previously designed to produce success and a Mathematics and a Portuguese test designed to produce failure. The success tests were designed below fourth grade level of competence and the failure tests above. The tests were based on regular school content and had the format of common classroom tests. They were previously administered to another group of children (total number of students ranged from 132 in the Math/failure test to 124 in the Portuguese/failure test). Student performance was analyzed for all the students together and for the low SES students, separately. In both cases results indicated that the level of difficulty was adequate to produce the desired outcome. More than 90% of the students succeeded in the test designed to produce success and more than 90% of the students failed in the tests designed to produce failure.

Each test was administered in a different day and in the students' own classroom. Though only the data of SAA and UAA low SES students were of interest, all students in the class participated in the data collection. This was done to avoid introducing changes in the environment. After finding out their grades, students were asked to answer a questionnaire where they attributed causality to their outcome in each test by choosing one of the listed options after each question. The first four options were the four causal categories proposed by Weiner and the last one was "none of the above".

Analysis. The attribution data were analyzed by means of 4 x 2 chi-square analyses, having at one level the four categories of attribution and at the other level the two types of students (SAA and UAA). Each 4 x 2

chi-square table was further partitioned in three 2 x 2 orthogonal tables in order to better investigate where differences were located. Each analysis considered only those subjects with complete data (test and attribution questionnaire) in each task separately.

Next, the subjects were classified by locus of control according to their type of attribution in each content area and outcome. Then, a three way completely crossed analysis of variance procedure was computed. The dependent variable was self-concept score compared by type of academic achievement (SAA and UAA), sex (male and female) and locus of control (internal and external). Due to unequal frequencies the classic regression approach was used.

Results. Overall, the attributions to success in the Mathematics and the Portuguese test were very similar (Tables 2 and 3). There were significant differences between the two groups though, as a whole, more than half of the students tended to make effort attributions. Chi-square partitioning (Table 6) showed no difference between SAA and UAA students in terms of locus of control of their success attributions. However, within the goup of students with internal type of attributions a significant larger number os SAA than UAA students emitted ability attributions. Actually, none of the UAA students attributed their success to their ability. There was no difference between the two groups of students who emitted external attributions to success in Mathematics. Most of them said they succeeded because the test was easy. A large majority of the external students also attributed their success in Portuguese to the easiness of the test. However, a significantly large number of UAA students, compared to SAA students, emitted luck attributions.

The subjects also showed a similar behavior in both content areas when attributing causality to their failure. Overall, most of the students tended to make effort and task difficulty attributions (Table 4 and 5). Chi-square partitioning showed that there was significant relationship between locus of control of the attribution and academic achievement. While a greater number of SAA students attributed their failure to external causes, a large number of the UAA students attributed it to internal causes. Furthermore, within the group of internal subjects a very large majority of the SAA students (87,5% and 93,7%) attributed their failure to lack of effort and very few to lack of ability while the attributions of internal UAA students was more or less equally distributed between ability and effort.

Analysis of variance of self-concept score in all four situations (content by outcome) showed consistent significant differences between subjects with satisfactory academic performance and those with unsatisfactory performance.

In all cases SAA subjects had higher self-concept scores than UAA subjects ($\bar{X}_{DS}$ = 188.5; $\bar{X}_{DI}$ = 168.6). None of the other main effects and interactions were of significance.

Conclusion. In the success situation, data analysis showed significant relationships between attributional pattern and academic achievement. Such was mostly due to the fact that more SAA students with internal attributional pattern attribute their success to ability than UAA internal student. However, inspection of the results suggests that, in the school environment, the majority of the low SES children attribute their success to their personal effort. Regardless of their previous history of achievement students tend to assume responsibility for it. Still, it is very puzzling that so few of the SAA students attributed it to their ability. This result suggests a tendency to assign causality in agreement with cultural norms which stress the value of hard work or effort as the major determinant to success. This was very evident even though students came from very poor social environments. In this case, the inculcation of the middle class effort ideology is evident.

There was also significant association between academic performance and causal attributions to failure. When the data is aggregated by locus of control (internal vs. external) the results tends to be as expected by the model --- SAA students externalize their failure and UAA students internalize it.

In summary, the results show a generalized tendency to internalize success experiences regardless of previous history of achievement. But when subject to failure experiences, students with a previous history of success tend to emit external attributions thus assuming less responsibility for the outcome. On the other hand, students with a history of failure internalize it when they state that such outcome is due to either their lack of ability or effort.

Although data analysis showed no significant relationship between locus of control of the attribution and self-concept, level of academic achievement alone was responsible for the differences observed. As expected, students with a history of academic success had higher self-concepts. The experience of successive promotions in school along with a higher frequency of positive evaluations from self and others were, most likely, influential in the development of a greater sense of personal competence.

The informations obtained in this investigation point to the fact that even though shools may provide significant experiences to the development of the child's healthy personality, self-concept and sense of personal competence, it may also act in the opposite direction especifically with those many

children who, at a very young and vulnerable age, are submitted to the experience of academic failure. As William Glasser (1972) has pointed out:

> Education, that should be one fo the basic sources of identity construction, very often gives little positive contribution to the identity of those who succeed but, unfortunately, it gives contribution to the failure identity of those who fail (p. 55).

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TABLE 1

Causes Attributed to Academic Success by SAA Students and

Causes Attributed to Academic Failure by UAA Students

Type of School Achievement	Causal Attributions				
	Ability	Effort	Task Difficulty	Luck	Others
Satisfactory (SAA)	6	11	-	-	3
Unsatisfactory[a] (UAA)	6	5	1	-	10

a. There are more than 20 attributions because two students attributed more than one cause to their failure.

TABLE 2

Chi-Square Analysis of the Causal Attributions of Success in a Portuguese Test, by Type of Academic Achievement

Type of Academic Achievement	Type of Attribution				
	Ability	Effort	Task Difficulty	Luck	Total
Satisfactory					
n	21	69	33	01	124
Row %	(16.9%)	(55.6%)	(26.6%)	(0.8%)	(100.0%)
Column %	(100.0%)	(58.97%)	(64.71%)	(12.5%)	(62.9%)
Unsatisfactory					
n	0	48	18	7	73
Row %	(0.0%)	(65.8%)	(24.6%)	(9.6%)	(100.0%)
Column %	(0.0%)	(41.03%)	(35.29%)	(87.5%)	(37.1%)
Total					
n	21	117	51	8	197
Row %	(10.66%)	(59.39%)	(25.89%)	(4.06%)	(100.0%)
Column %	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.0%)

$\chi^2 = 21.9489^{**}$ $p < 0.0001$

TABLE 3

Chi-Square Analysis of the Causal Attributions of Success in a Mathematics Test, by Type of Academic Achievement

Type of Academic Achievement	Type of Attribution				
	Ability	Effort	Task Difficulty	Luck	Total
Satisfactory					
n	24	55	42	2	123
Row %	(19.5%)	(44.7%)	(34.1%)	(1.6%)	(100.0%)
Column %	(100.0%)	(55.0%)	(67.74%)	(33.33%)	(64.1%)
Unsatisfactory					
n	0	45	20	4	69
Row %	(0.0%)	(65.2%)	(29.0%)	(5.8%)	(100.0%)
Column	(0.0%)	(45.0%)	(32.26%)	(66.67%)	(35.9%)
Total					
n	24	100	62	6	192
Row %	(12.50%)	(52.08%)	(32.29%)	(3.12%)	(100.0%)
Column %	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.0%)

$\chi^2 = 19.8562^*$ $\quad p < 0.002$

TABLE 4

Chi-Square Analysis of the Causal Attributions of Failure in a Portuguese Test, by Type of Academic Achievement

Type of Academic Achievement	Type of Attribution				
	Ability	Effort	Task Difficulty	Luck	Total
Satisfactory					
n	6	42	42	20	110
Row %	(5.4%)	(38.2%)	(38.2%)	(18.2%)	(100.0%)
Column %	(20.0%)	(58.3%)	(77.8%)	(76.9%)	(60.4%)
Unsatisfactory					
n	24	30	12	6	72
Row %	(33.3%)	(41.7%)	(16.7%)	(8.3%)	(100.0%)
Column %	(80.0%)	(41.7%)	(22.2%)	(26.1%)	(39.6%)
Total					
n	30	72	54	26	182
Row %	(16.48%)	(39.56%)	(29.67%)	(14.29%)	(100.0%)
Column %	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)

$\chi^2 = 30.3961^*$ $p < 0.0001$

TABLE 5

Chi-Square Analysis of the Causal Attributions of Failure in a Mathematics Test, by Type of Academic Achievement

Type of Academic Achievement	Type of Attribution				
	Ability	Effort	Task Difficulty	Luck	Total
Satisfactory					
n	3	45	53	12	113
Row %	(2.7%)	(39.8%)	(46.9%)	(10.6%)	(100.0%)
Column %	(12.0%)	(61.6%)	(77.9%)	(63.2%)	(61.1%)
Unsatisfactory					
n	22	28	15	7	72
Row %	(30.6%)	(38.9%)	(20.8%)	(9.7%)	(100.0%)
Column %	(88.0%)	(38.4%)	(22.1%)	(36.8%)	(38.9%)
Total					
n	25	73	68	19	185
Row %	(13.51%)	(39.46%)	(36.76%)	(10.27%)	(100.00%)
Column %	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)

$\chi^2 = 33.5093^{**}$ $\quad p < 0.0001$

TABLE 6

Summary Table of the Results of Chi-Square Partitioning in the Four Types of Task Outcome: Academic Achievement by Locus of Control of the Attributions

Type of Task Outcome	Type of Chi-Square Partitioning		
	Internal vs External	Ability vs Effort	Task Difficulty vs Luck
Success in Portuguese	n.s.	$\chi^2 = 13.21$ $p < 0.0001$	$\chi^2 = 7.75$ $p < 0.01$
Success in Mathematics	n.s.	$\chi^2 = 16.94$ $p < 0.001$	n.s.
Failure in Portuguese	$\chi^2 = 17.36$ $p < 0.001$	$\chi^2 = 12.48$ $p < 0.001$	n.s.
Failure in Mathematics	$\chi^2 = 12.83$ $p < 0.001$	$\chi^2 = 18.37$ $p < 0.001$	n.s.